

Statement of James H. Miller III to the United States Blue Ribbon
Commission on America's Nuclear Future
Augusta, Georgia
January 7, 2011

Good morning Chairman Scowcroft and Commissioners. My name is James H. Miller, III. I am president and chief executive officer of Southern Nuclear Operating Company, a subsidiary of Southern Company. I have attached a brief resume to my testimony as Exhibit 1. For ease of reference, I have also attached a full description of my company, Southern Nuclear Operating Company, as Exhibit 2.

For our purposes, here I will briefly describe my company. Southern Nuclear is the licensed operator of six units at three locations: the Vogtle Electric Generating Plant located approximately 30 miles south of Augusta; Hatch Nuclear Plant near Baxley, Georgia and the Farley Nuclear Plant near Dothan, Alabama. These six nuclear units comprise over 6000 megawatts of generating capacity and represent approximately 17 percent of the total annual generation of the Southern Company system.

On behalf of Southern Company and Georgia Power Company, allow me to welcome you to Georgia and to express our appreciation for the important work you are doing. It is fitting that the Commission is meeting this morning in Augusta, because this area is in a very real way the center of gravity for the nuclear revival in the United States. In addition to the important work at the Savannah River Site, Southern Nuclear is an applicant for a Combined License to construct and operate two new nuclear units at Plant Vogtle; we refer to these as Vogtle 3 and 4 as they are in addition to the two existing units I just described. Southern Nuclear is the first holder of a Limited Work Authorization granted from the Nuclear Regulatory Commission when the Early Site Permit was approved. The new units under construction at Plant Vogtle represent the culmination of more than two decades of effort by the industry and the government to improve the operating records of the existing fleet as well as the technical, regulatory and economic model for new plants. If the

United States is going to lead the world in the peaceful use of nuclear power, as I believe we should, the recommendations this Commission makes will be crucial to achieving that goal. Such a mission deserves our collective best efforts.

Let me make a historical observation: The fundamental underpinning of electric power production is efficient use of the basic steam and water cycle. Hydropower, some gas peaking units, and certain renewable sources such as wind or solar, are important fuel choices for America, but the bulk of our electricity comes from steam turbines and their corresponding generators. Over the last two centuries we have learned that the lowest cost steam is produced by the fuel source that has the most concentrated thermal energy. Think of the progression of concentrated energy as you go from wood to coal and then to natural gas and oil. More efficient, reliable and low-cost electricity production was realized by efficiently managing the ever-more concentrated forms of energy. See Exhibits 3a and 3b for a comparison.

Uranium, of course, possesses far more concentrated thermal energy than any of the fuel sources I have just named. Peaceful use of nuclear technology for base-load electric generation is a natural progression of an industrial society such as ours. If the 20th century was the century of oil, then, at least for electric power generation, the 21st century has the potential to be the century of atom. We owe it to our fellow Americans to get it right.

Getting it right requires a first step and at Southern Nuclear we have taken one: we are constructing the first new nuclear plant in this country in over 30 years. Let me give you a status report.

We began working in earnest on this project in 2005. First with our co-owners and then with the many disciplines necessary to evaluate the various fuel choices for low-cost service to our customers, we spent the better part of two years in analysis. Through many scenarios and many variables, nuclear consistently emerged as a very viable option and in

most cases, as the clear leader for base-load generation. After a competitive bidding process held by the Georgia Public Service Commission, Vogtle 3 and 4 was selected; in 2008 the project was certified by the Commission pursuant to its rules and regulations.

Since then, many events have occurred, from the receipt of an Early Site Permit, an application for a Combined Operating License (COL) and numerous interactions with the NRC staff on both technical and licensing issues. More recently, on December 13, the NRC's Advisory Committee on Reactor Safeguards (ACRS) said the Westinghouse AP1000 design certification amendment met all NRC requirements. On December 17, an ACRS subcommittee completed its review of the Vogtle 3 and 4 COL. Full ACRS committee consideration for the COL is set for January 13 of this year. Approval there will open the way for the issuance of the Vogtle COL later this year. By the time the COL is issued, subsurface foundation work for the nuclear island on the new units will have been ongoing for more than 18 months pursuant to the authority in our Early Site Permit and Limited Work Authorization. As we speak, NRC approved backfill work on Units 3 and 4 at Plant Vogtle is underway. At the conclusion of backfill work, the construction of crane foundations, a mechanically stabilized earth retaining wall and mudmat will begin. The construction of ancillary structures such as a module assembly building and the fabrication of modules and nuclear island components are also well under way. I have available a number of copies of a DVD which describes our construction efforts. I will leave them with the Secretary. A video version may also be viewed on our website at www.southerncompany.com. A timeline of significant events is also attached as Exhibit 4.

I mention this to emphasize that the construction of Vogtle 3 and 4 is not a theoretical or hypothetical project. The project is real and is a major economic engine for this area. Georgia Power and its co-owners expect to begin delivering electricity from Unit 3 to their customers in 2016 and from Unit 4 in 2017. About 1,500 workers are employed at the

construction site today. At its peak, the project should employ 3,500 workers during construction and then approximately 800 employees during commercial operation.

These new nuclear units illustrate the achievements that are possible when industry and government work together within the framework of coherent public policy. The creation and implementation by the NRC of a new reactor licensing process, the enactment of incentives for the construction of new plants in the Energy Policy Act of 2005, the cooperative efforts of DOE and the industry under Nuclear Power 2010 and the creation of a stable regulatory environment for the construction of new plants by the state Georgia have all combined to bring the country to the point where we are in position to realize the benefits of a new generation of nuclear power plants.

The same sort of coherent policy and cooperation between government and industry is necessary to resolve the issues involving the management and disposal of spent nuclear fuel and high-level nuclear waste. Such a policy was created in the Nuclear Waste Policy Act of 1982, but unfortunately, that policy has not been implemented successfully.

Significantly, the failure to implement the nuclear waste policy has been for political, not technical, reasons. It is my sincere belief that if the implementation of the policy had been guided by science and not politics, the United States would be well on its way to developing a geologic repository at Yucca Mountain, Nevada.

The customers who are served by Southern Company's fleet of nuclear power plants have paid well in excess of \$1 billion in nuclear waste fees to the federal government since the Nuclear Waste Policy Act was signed into law.

Unfortunately, they have seen little in the way of return on their investment. To most observers, it seems that the only constant in federal nuclear waste policy over the last decade has been increasingly creative defenses to breach -of - contract claims and the continuing record of adverse legal decisions. The wavering of the federal commitment to fulfill its statutory and contractual obligations with every shift of the political winds has created significant doubt among the

members of the public in the government's legal judgment and its desire to spare taxpayers the cost of a poor litigation strategy and adverse judgments. While there is no doubt that spent nuclear fuel is being stored safely at the nation's nuclear power plants, and can be for the foreseeable future, these facilities were never intended to be permanent storage facilities.

The charter of this Commission charges it with evaluating "all possible alternatives" for the storage, processing and disposal of nuclear waste. The Commission is to be commended for the breadth of its review of these issues and for not taking any potential solution to this issue off the table.

Having visited Yucca Mountain and having listened to the best engineers in the country debate the alternatives, I remain convinced that a geologic repository remains the best technical solution for the long-term storage and disposal of nuclear waste. I am also convinced that Yucca Mountain is the best site in this country for such a repository. Accordingly, the Commission would do the country a great service by recommending that the licensing and development of the repository Yucca Mountain be continued. In any event, the Commission should urge that the technical knowledge developed about Yucca Mountain and long-term storage and disposal of spent nuclear fuel reflected in DOE's application for a repository construction authorization be preserved.

This is not to say that the Nuclear Waste Policy Act could not be improved. Subjecting the funding for the repository to the appropriations process has overly politicized the licensing and construction of the project, and made it difficult for those charged with developing the project, and in turn the generators who depend on the project, to plan efficiently. Moreover, the diversion of nuclear waste fees to other purposes in years when receipts exceed appropriations threaten the viability of the program. A coherent nuclear waste program must include safeguards that ensure that nuclear waste

fee revenues are available for expenditure for the nuclear waste program. The fees must be exempted from the appropriation process.

In conjunction with the reformation of the funding process, it is time to reevaluate the entity responsible for the implementation of the federal nuclear waste policy. Unfortunately, the recent effort to withdraw the application demonstrates that DOE will forever be subject to changes in executive and congressional attitudes concerning the necessity of compliance with the Act. For that reason, the Commission should consider and support legislation pending in Congress that would transfer the responsibility for repository development to a public corporation. I must emphasize, however, that without depoliticizing the funding process, simply shifting responsibility for implementing the Act will be ineffective.

Finally, the Commission should consider long-term centralized storage of spent nuclear fuel, whether at Yucca Mountain or at another site. Licensing Yucca Mountain for long-term storage of one hundred years or more before commencing permanent disposal there would enable scientists to study the reaction of the spent nuclear fuel and high-level radioactive waste to placement in the repository and allow advancements in spent fuel recycling, shielding, storage and disposal technologies to be implemented before the first casks are made inaccessible. Advancements in each of these technologies promise to increase the efficiency of the radioactive waste program.

In this connection, the Commission should also consider a recommendation to reform the repository licensing process to permit a storage-only license for the repository, with requirements suitable to limited, retrievable storage. Repository closure would then be subject to a license to close the facility after a suitable period of study of the stored material and any new technologies that might reduce its volume or radioactivity.

While I recognize that in the current political climate the development of Yucca Mountain may appear unlikely, I urge the Commission to carefully consider the progress that has been made there. At a minimum, the Commission should recommend that the technical knowledge and experience gained at Yucca Mountain be preserved and that the site be maintained as an option in the event circumstances create the opportunity to finish the work that has begun there.

I appreciate the opportunity to share these thoughts with the Commission today. The United States' leadership in the nuclear industry depends on the adoption and implementation of a sound nuclear waste policy. I have great confidence in this Commission to provide the needed guidance to the administration and Congress on this important issue and would be delighted to answer any questions you may have.

Exhibit 1

James H. Miller, III, is Chairman, President and Chief Executive Officer of Southern Nuclear Operating Company. In this role, he is responsible for all operations of Southern Company's six nuclear reactors. He is also responsible for new nuclear development initiatives, including the construction of Plant Vogtle Units 3 and 4 near Augusta, Ga. He was elected President and CEO on August 28, 2008 and Chairman on Oct. 1, 2008.

Previously, Miller served as Senior Vice President, Compliance Officer and General Counsel at Georgia Power. In that position, he provided legal counsel to the Georgia Power management team and served on the Georgia Power Management Council. He was also responsible for overseeing the following departments: Resource Policy and Market Planning, Risk Management, Land Legal Services, Diversity, Compliance, Corporate Security and Workplace Ethics.

Miller joined Southern Company in 1994 as General Counsel for Southern Nuclear after achieving partner status with the Balch & Bingham law firm in Birmingham, Ala. He also held the position of Senior Vice President of External Affairs and Senior Vice President of the Birmingham Division at Alabama Power.

He serves on various industry and professional boards, including the Board of Directors of the Nuclear Energy Institute (NEI), the Foundation for Nuclear Studies, the University of Alabama Farrah Law School Foundation and The University of Alabama Culverhouse College of Commerce Board of Visitors. Miller most recently served on the Board of Directors for the Institute of Nuclear Power Operations (INPO). He also has been involved in many community activities, including board memberships of the Lakeshore Foundation, the United Way and the Farrah Law Society.

Miller earned a bachelor's degree in marketing from the University of Alabama in 1971. He then spent three years in the U.S. Navy and later earned the rank of lieutenant commander in the U.S. Navy Reserves. He earned a law degree from the University of Alabama in 1977. He is also a graduate of the Advanced Management program at Oxford University, England and the Nuclear Reactor Technology course at the Massachusetts Institute of Technology. He is listed in the Who's Who in American Law.

Exhibit 2

Southern Nuclear Operating Company, headquartered in Birmingham, Ala., operates Southern Company's six nuclear units at three locations: the Alvin W. Vogtle Electric Generating Plant near Waynesboro, Ga.; the Edwin I. Hatch Nuclear Plant near Baxley, Ga.; and the Joseph M. Farley Nuclear Plant near Dothan, Ala. Plant Vogtle and Plant Hatch were built and are co-owned by Georgia Power Company, Oglethorpe Power Company, the Municipal Electric Authority of Georgia, and Dalton Utilities. Together, these two nuclear power plants generate approximately 20 percent of Georgia Power's electricity. Plant Farley was built and is owned by Alabama Power, and the plant generates approximately 19 percent of Alabama Power's electricity.

Southern Nuclear, Georgia Power and Alabama Power are each wholly owned subsidiaries of Southern Company. With 4.4 million customers and more than 42,000 megawatts of generating capacity, Atlanta-based Southern Company (NYSE: SO) is the premier energy company serving the Southeast. A leading U.S. producer of electricity, Southern Company owns electric utilities in four states and a growing competitive generation company, as well as fiber optics and wireless communications. Southern Company brands are known for excellent customer service, high reliability and retail electric prices that are below the national average. Southern Company is consistently listed among the top U.S. electric service providers in customer satisfaction by the American Customer Satisfaction Index (ACSI). Visit our website at www.southerncompany.com.

The Joseph M. Farley Nuclear Plant is located on 1,850 acres along the Chattahoochee River near Dothan in southeast Alabama. Southern Company Services, Daniel Corporation and Bechtel Corporation began construction of the plant in 1970. Unit 1 achieved commercial operation in December 1977. Unit 2 began commercial operation in July 1981. The total cost of the plant was about \$1.57 billion. Each unit is capable of generating 888 megawatts (mw) for a total capacity of 1,776 mw. The plant is powered by Westinghouse

Pressurized Water Reactors with Westinghouse Electric providing the turbine generators as well. The containment building, which houses the reactor, the reactor coolant system and other nuclear related components, is constructed of reinforced concrete and carbon steel.

Plant Farley has six emergency diesel generators, one assigned to each unit, as well as three additional available as back-ups. The site is well equipped with a three loop reactor coolant system, each loop with a reactor coolant pump and steam generator. Each of the three pumps runs at 7,000 horsepower with a capacity of 90,000 gallons per minute.

Approximately 900 people – engineers, mechanics, control room operators, lab technicians, instrument and control technicians, electricians, security officers and others – oversee the plant's operation 24 hours a day, 7 days a week. Fulltime on-site inspectors from the U.S. Nuclear Regulatory Commission (NRC) monitor the plant to ensure it is maintained and operated safely.

Since commercial operation began in 1977, Plant Farley has generated more than 200 billion kilowatts of electricity. That's enough generation to supply every Alabama residential customer with electricity for 14 years. Plant Farley plans to be supplying power for far longer than that, the site received a license extension in May of 2005 that allows Unit 1 to generate electricity through June 2037, and Unit 2 to operate through March 2041.

The Edwin I. Hatch Nuclear Plant sits on a 2,224 acre site along the Altamaha, Georgia's largest river. Southern Company Services worked with Bechtel Corporation and began construction of Plant Hatch Unit 1 in 1968. Since it began operation in 1974, Plant Hatch has supplied, on average, more than nine percent of Georgia's total electricity needs. The site includes two General Electric Boiling Water Reactor (BWR) units, eight cooling

towers, a turbine room the size of two football fields, a state-of-the-art control room, an environmental lab and a high voltage switching yard or substation.

Plant Hatch was the first nuclear power plant in Georgia going commercial on December 31, 1975, and costing \$414 million dollars. Plant Hatch Unit 2 was quick to follow going commercial on September 5, 1979, with a price tag of 520 million dollars. Plant Hatch has a total capacity of 1848 megawatts with each unit's output equaling 924 megawatts.

Both units at Plant Hatch have a strong safety record and have been honored for their high level of efficiency. The emergency safety equipment at Plant Hatch is made up of two emergency diesel generators for each unit, as well as a back-up generator that can be utilized by either unit. The Reactor Coolant System is directly connected to the reactor through the drywall located in containment and offers nominal pressure if called upon.

Plant Hatch employs over 850 individuals in a wide variety of positions. The plant will be providing electricity and jobs for decades to come, thanks to a license extension granted in January 2002. The license renewal process gave Unit 1 the license to operate through August 2034 and Unit 2 the license to operate through June 2038.

The Alvin W. Vogtle Electric Generating Plant sits on a 3,100 acre site along the Savannah River, in Burke County near Waynesboro, Ga. and approximately 34 miles southeast of Augusta, Ga. Similar to other electric generating plants, Plant Vogtle has large turbines and generators, a computerized control room, a chemistry lab, and is connected to the electric grid through high-voltage switchyards. Massive containment buildings – with thick walls of concrete and steel – house two 355-ton reactor vessels on huge concrete slabs. The 548-foot high twin cooling towers can be seen for miles.

Plant Vogtle is the newest member of the Southern Nuclear fleet. Southern Company Services and Bechtel Corporation began construction of the plant in 1974. Unit 1 went on line June 1987, while Unit 2 began commercial operation in May of 1989. The total cost of the plant was \$8.87 billion, including the needed financing. Each unit at Plant Vogtle is capable of generating 1,225 megawatts of electricity for a total capacity of 2450 mw. The plant is powered by Westinghouse Pressurized Water Reactors with General Electric providing the turbine generators.

Plant Vogtle boast a four loop Reactor Coolant System with each loop having its own pump and generator. The four pumps run at approximately 7000 horse power with an amazing capacity of 100, 600 gallons per minute. Both units at Plant Vogtle are equipped with two emergency diesel generators, as well as four steam generators between them. The four steam generators contain over 5,000 stainless steel tubes.

Plant Vogtle Units 1 and 2 employ over 950 individuals to date with that number growing due to the expansion of Vogtle Units 3 and 4. Plant Vogtle recently received a license extension as well in June 2009. Vogtle Units 1 and 2 are now re-licensed and plan to be on line through January 2047 and Unit 2 through February 2049.

Plant Vogtle is at the heart of company and industry growth with two new units scheduled to go online in 2016 and 2017.

Power Production Equivalents

1 uranium fuel pellet =



1 ton of coal



17,000 cubic feet
of natural gas



5,000 pounds of wood



149 gallons of oil

Source: Nuclear Energy Institute

A Matter of Space

Acres required for annual energy output equivalent to Vogtle 3&4

Wind



~390,000 acres

Solar



~55,000 acres

Biomass



4.3 million acres of trees

Nuclear



~2,000 acres

Exhibit 4

Significant Event Timeline:

2011

Fourth Quarter – NRC plans to complete its review of the design certification for the AP1000 and issue final rulemaking on the design.

Late 2011 – SNC anticipates getting the COL for the new Vogtle units.

Unit 3 is planned for operation in 2016 and Unit 4 in 2017.

2010

June - Southern Company and the Department of Energy announce that final terms and conditions have been reached regarding the loan guarantees for the new Vogtle units.

March - Safety-related construction began with the first placement of backfill soil into the area excavated for Unit 3.

February - President Obama and DOE Secretary Steven Chu announce the award of conditional loan guarantees for Vogtle Units 3 and 4. The DOE loan guarantees are expected to save Georgia Power's customers millions in interest costs annually over the expected life of any guaranteed borrowing.

2009

August - Excavation of the area where the new units are planned began at the plant site.

August - Plant Vogtle Units 3 and 4 received an ESP from the NRC. The Vogtle ESP is the first in the industry to reference a specific technology and to come with a Limited Work Authorization (LWA) which allows limited safety-related construction at the site prior to receiving the COL.

July - Southern Nuclear begins training Operations instructors for Vogtle Units 3 and 4.

June - Southern Nuclear cleared another hurdle in the licensing process for new units at Plant Vogtle when the Nuclear Regulatory Commission's Atomic Safety and Licensing Board issued its ruling on contentions related to the Early Site Permit (ESP) application. The ASLB ruled in favor of Southern Nuclear and the Nuclear Regulatory Commission staff in all cases.

May - Plant Vogtle Units 3 and 4 were named NuStart's reference plant for AP1000 technology.

April -- Georgia Gov. Sonny Perdue signed into law Senate Bill 31, which allows Georgia Power to recover financing costs during the construction of nuclear units while they're being built, plus reducing the plant's costs to customers.

April - Georgia Power provided the Westinghouse-Shaw consortium full notice to proceed on Plant Vogtle Units 3 and 4. Shaw and Westinghouse began mobilizing at the plant site and performing activities to support construction.

March - The NRC's ASLB held its hearings to review contentions on the Plant Vogtle ESP.

March - Georgia Power received certification from the Georgia Public Service Commission to build new units at the site.

2008

November - Southern Nuclear was notified that five petitioners filed a petition to intervene in the COL application that the company filed for new units at Plant Vogtle. The groups are Atlanta Women's Action for New Direction (WAND), Blue Ridge Environmental Defense League (BREDL), Center for a Sustainable Coast, Savannah Riverkeeper and Southern Alliance for Clean Energy (SACE).

May - Georgia Power submitted a nuclear self-build option to the Georgia Public Service Commission (PSC) to meet demand in the 2016-2017 timeframe. The company received no other bids in response to its 2016-2017 baseload capacity request for proposals. The Georgia PSC rules require market bids to be compared with self-build proposals, but no market bids were received.

April - Georgia Power entered into an Engineering, Procurement and Construction contract with the Westinghouse-Shaw consortium to construct two Westinghouse AP1000 units at the site. This agreement was signed on April 8, 2008.

March - Southern Nuclear filed a Combined Construction and Operating License (COL) application with the NRC for new units at the Vogtle site.

2007

March - The NRC's Atomic Safety and Licensing Board (ASLB) announced that it will allow a group of organizations to intervene in the ESP process for new units at Plant Vogtle. This announcement came following a pre-hearing in February where the ASLB reviewed information presented by the intervenors.

2006

August - Southern Nuclear filed an Early Site Permit (ESP) for new units at the Plant Vogtle site.

January - Southern Nuclear selects Westinghouse AP1000 technology for new units at the Plant Vogtle site.

2005

August - Southern Nuclear announced its intent to file an ESP or pre COL application in the summer of 2006.

August - Southern Nuclear announced, on behalf of the Plant Vogtle co-owners, that it had officially informed the NRC that it had selected the Plant Vogtle site to evaluate for possible new nuclear generation.

August - The Energy Policy Act of 2005 was signed into law.

July - Southern Nuclear notified the NRC of a potential site selection for its ESP application. That site was Plant Vogtle.

February - Southern Nuclear sent a notice of intent letter to the NRC stating its intent to submit an application for an Early Site Permit for a new nuclear plant. At that time, the company said that no site had been selected for new nuclear generation.

2004

December - Southern Company submitted its Nuclear Power 2010 proposal to the Department of Energy (DOE). The proposal requested DOE consider Southern Nuclear in new nuclear plant licensing projects co-funded by DOE.

March - Southern Company became a founding member of the NuStart Energy Consortium.

